

INTERNATIONAL SEARCH REPORT

International application No.

PC P03/07503

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl⁷ C21D8/10, C22C38/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl⁷ C21D8/00-8/10, 9/08, C22C38/00-38/60

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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|---------------------------|-----------|----------------------------|-----------|
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| Kokai Jitsuyo Shinan Koho | 1971-2003 | Jitsuyo Shinan Toroku Koho | 1996-2003 |

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | JP 2002-129283 A (Sumitomo Metal Industries, Ltd.), 09 May, 2002 (09.05.02), Claims; column 1, lines 19 to 22; column 5, lines 42 to 49; column 8, 25 to 32; table 1; kind of steel H (Family: none) | 1-16 |
| X | JP 64-25916 A (NIPPON STEEL CORP.), 27 January, 1989 (27.01.89), Claims; page 1, lower right column, lines 3 to 8; page 3, upper left column, line 15 to upper right column, line 1 (Family: none) | 1-16 |

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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| * Special categories of cited documents: | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "A" document defining the general state of the art which is not considered to be of particular relevance | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "E" earlier document but published on or after the international filing date | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "&" document member of the same patent family |
| "O" document referring to an oral disclosure, use, exhibition or other means | |
| "P" document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search
15 July, 2003 (15.07.03)

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05 August, 2003 (05.08.03)

Name and mailing address of the ISA/
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | JP 61-279623 A (NIPPON STEEL CORP.), 10 December, 1986 (10.12.86), Claims (Family: none) | 1-16 |
| A | GB 2155950 A (NIPPON STEEL CORP.), 02 October, 1985 (02.10.85), Claims & DE 3507124 A & FR 2560608 A & JP 60-187663 A Claims & CA 1239568 A | 1-16 |

<The subject of search>

Claims 1 and 2, and, claims 3 and 4 include all the oil well steel pipes having desired properties of "the ratio a/b of the crushing pressure after pipe expansion to the crushing pressure before pipe expansion is the range of 0.85 to less than 1" and "the ratio c/d of the crushing pressure after pipe expansion and aging to the crushing pressure before pipe expansion is the range of 1 to 1.2", respectively. However, only an oil well steel pipe is disclosed in the meaning of PCT Article 5, which is produced by a method comprising subjecting a steel piece having a specific chemical composition, wherein the contents of C, Mn, P, S, Nb, Ti, Al and N are values of specific ranges, respectively, and the balance is constituted by iron and inevitable impurities, to a hot rolling, and winding up the resulting steel belt at a temperature of 300°C or lower, or comprising heating a steel piece having a specific chemical composition, wherein the contents of C, Mn, P, S, Nb, Ti, Al and N are values of specific ranges, respectively, and the balance is constituted by iron and inevitable impurities, to a temperature from A_{c3} [°C] to 1150°C, and then cooling the resultant steel piece at a rate of 5 to 50°C/sec for the range of 400 to 800°C. Therefore, claims 1 and 2, and, claims 3 and 4 lack the support in the meaning of PCT Article 6.

Accordingly, the search for claims 1 to 4 and claims 5 to 10 defined by referring to claims 1 to 4 has been carried out for the range supported by and disclosed in the specification, that is, for an oil well steel pipe produced by a method comprising subjecting a steel piece having a specific chemical composition, wherein the contents of C, Mn, P, S, Nb, Ti, Al and N are values of specific ranges, respectively, and the balance is constituted by iron and inevitable impurities, to a hot rolling, and winding up the resulting steel belt at a temperature of 300°C or lower, and an oil well steel pipe produced by a method comprising heating a steel piece having a specific chemical composition, wherein the contents of C, Mn, P, S, Nb, Ti, Al and N are values of specific ranges, respectively, and the balance is constituted by iron and inevitable impurities, to a temperature from A_{c3} [°C] to 1150°C, and then cooling the resultant steel piece at a rate of 5 to 50°C/sec for the range of 400 to 800°C.